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HUMAN RESOURCES DEVELOPMENT PRACTICES AS A KEY TOOL TO ATTRACT, MOTIVATE AND RETAIN KNOWLEDGE WORKERS

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Management literature maintains that knowledge workers represent a very specific type of the workforce. Therefore for knowledge-intensive firms that are built mainly on employment of knowledge workers the knowledge management and human resources management tasks merge into one challenging issue. We discuss characteristics of knowledge workers and specific challenges in managing them and present how these peculiarities transform the practices of the human resources management. Based on this analysis we suggest a number of human resources development practices as being, in our view, especially relevant for knowledge workers and able to make a significant contribution to the efficiency both of the knowledge workers and of the company in whole. Further we demonstrate that these human resources development practices may also contribute positively to some other crucial aspects of the knowledge management – namely, knowledge sharing and absorptive capacity development. As a conclusion, we formulate the directions and hypotheses for the future empirical research.

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CONTENT

Introduction

Both management practitioners and academics recognize that human resources of the company are the most valuable asset of the modern organizations. Correspondingly, human resources management practices[1] get into the focus of attention as being able to influence significantly the development of a company — both its' successes and serious problems (e.g. see Becker & Gerhart, 1996). The other hotly discussed theme of the last years is knowledge management processes in a company. A number of modern scientists claim that it is namely these processes that are crucial for creation and maintenance of the competitive advantage in the post-industrial era (Nonaka, 1994). Tasks and problems of these two approaches to sustaining competitiveness of contemporary companies, human resources management and knowledge management, are interrelated with each other – for instance, some practices of human resources management may strengthen, or, on the contrary, weaken the intra organizational barriers to knowledge sharing (Husted & Michailova, 2002; Currie & Kerrin, 2003; Minbaeva et al., 2003; Storey, 2005).

However, in some companies these tasks become even more important and deeper intertwined with each other. The matter concerns organizations whose main activity is based on the employment of knowledge workers — in literature these companies are referred as "knowledge-intensive firms" (Alvesson, 1995). In fact, employees, their knowledge and skills, form the key capital of such a company and determine its unique competitive advantages so that its other assets play only additional role. Therefore, human resources management practices in knowledge-intensive firms become strategically important, linking together behaviour of the employees, knowledge-related processes and effectiveness of the organization. The logical question follows: what particular human resources management practices are able to influence the successful development of such companies and, therefore, are more important for them? In this paper we will try to suggest some answers to this question.

In the first part we discuss the characteristics of the knowledge workers and the specific challenges in managing them. Then, based on the literature analysis, we describe how these peculiarities of the knowledge workers transform the tasks and practices of the human resources man-

[1] In this paper we use the terms "human resources management" (HRM) and "personnel management" as interchangeable ones, not implying different historical approaches to managing individuals in organizations. Besides this, following Storey (2005) we use HRM term to label not only officially set department in a company and its functions, but, as well, any activities aimed on managing people and carried out by any member of an organization (for example, by middle managers).

agement. Following this logic, we propose a number of human resources development practices as being, in our view, especially relevant for knowledge workers and able to make a significant contribution to the efficiency both of the knowledge workers and of the company as a whole. Further on we demonstrate that the practices of personnel development we suggested may contribute positively not only to the efficiency of the knowledge workers' management, but also to some other crucial aspects of the knowledge management — knowledge sharing and development of the absorptive capacity. Finally, we conclude with directions and hypotheses for the future empirical research.

Knowledge workers: who are they?

The term "knowledge worker" was introduced into practice in 1960s (Drucker, 1959). The researchers argue that it is a special type of the workers, differing highly from the "traditional" workforce (Wuthnow & Shrum, 1983; Drucker, 1999; Scarbrough, 1999). Some authors ascribe to this category not less than 20-30% of all working population in the developed countries (Rajan et al., 1998; Drucker, 2002), and that is why the issues of managing knowledge workers are being widely discussed during the last decades.

But still, who the knowledge workers are, and what peculiarities do they have? Up to now, there is no definite answer to this question. Thus, Joseph (2005) notes, that despite the intensive usage of this term in the business literature, there is no single and precise understanding of it. Let us try to analyze different views on this issue.

One can find in the literature several key characteristics that are used by different authors to identify knowledge workers — in various combinations or separately. These are:

a) *the share of mental work within carried activities*. This is one of the most frequently used criteria. For instance, Flood and co-authors refer to the knowledge workers as to "occupations for which intellectual effort is … more important than physical endeavour in carrying out their work" (Flood et al., 2001, p.1153). Drucker is more cautious with this issue. He notes that service employees are also non-manual workers but they still do not qualify as knowledge workers (Drucker, 2002).

b) *the capability to create new knowledge*. This criterion is often implied by the authors, though rarely mentioned in their definitions explicitly. In this terms Miller provides a rare example directly stating that knowledge workers are the "workers who are not normally following a defined procedure, but exploiting all their creativity, knowledge and skills to move the business forward" (Miller, 2002, p.17).

c) *the level of education,* more precisely — the higher education degree. Interestingly this criterion is usually left on the background in the theoretical discussions. But when it turns to the empirical works, it is namely it that is being used by the researchers to distinguish knowledge workers from all others (e.g. see Flood et al., 2001; Starbuck, 1997). Drucker also supports this view suggesting that knowledge workers' activity requires formal and advanced schooling (Drucker, 2002).

d) *the share of information in the resources needed for the work.* This criterion was used in the early works on this topic. For instance, Bell (1973) used it, when he wrote about information society. In the later works the focus switched to the knowledge as the main asset of knowledge workers. Although the capabilities to process and analyze the information still occupy an important place among the characteristics of the knowledge workers, Starbuck (1997), for instance, points out that their work has by no means to be information-intensive.

e) *the professional characteristic (*profession itself*).* This criterion defines specialists of so called "free-lance professions", with traditional examples of doctors, lawyers, designers, etc. (e.g. see Davenport et al., 1996). The management literature of 1950–1980s witnessed, simultaneously to the discussion of the knowledge workers, another stream of arguments, related to the peculiarities of professionals (e.g. see Drucker, 1952; Rosica, 1972; Costello & Lee, 1974; Mollenhoff, 1977; Von Glinow, 1985). Von Glinow (cited in Lee & Maurer, 1997, p.253) identifies five characteristics of the professionals: "(1) they are expert in some abstract knowledge base that was acquired over a long period of time; (2) these professionals perceive a basic right to work in autonomous fashion; (3) these knowledge workers identify with their chosen profession and other members of that profession; (4) they hold an ethically based responsibility to help their clients (or employees); (5) knowledge workers value a collective standard (i.e., code of professional conduct) and feel committed to enforcement of that standard". As we see some of these characteristics have something in common with other criteria mentioned above, for instance, people with higher education are likely to identify themselves with their profession, and those who earn money by means of mental work in general are likely to enter professional associations as it gives them an opportunity to maintain and develop their qualification. The ethical aspect, from our point of view, is more likely to be a consequence of the other criteria, rather than the defining characteristic of this group of workers. Later this discussion of the professionals joined the knowledge workers' stream — probably, on the one hand, due to the intersections between these notions, and on the other hand — due to the vagueness of the "knowledge worker" terminology. However, opposite opinions on this issue also do exist — so

Scarbrough (1999, p.7, original italics) insists that professionals and knowledge workers are absolutely different categories of workforce, as "professionals, on the one hand, work *from* knowledge, drawing on a distinctive occupationally-defined body of expertise, and knowledge workers, on the other hand, work *with* knowledge".

f) the ability to earn money without organization, or, in other words, the ability to produce the "finished" product without organization. This criterion, in fact, is often mixed up with professional characteristic as when authors explain who belongs to this group of employees they usually list particular professions. Interestingly, Drucker, whose role in the dissemination of the "knowledge worker" term is hard to overestimate, claims the contrary, arguing that knowledge workers need an organization as it provides infrastructure that they cannot sustain themselves (Drucker, 2002).

It is evident that the listed above criteria, taken independently from each other, define not fully identical groups of employees. Thus, workers without higher education might be highly capable in new knowledge creation or may occupy positions, dealing mainly with information-processing. Alternatively, as Starbuck (1997) emphasizes, an expert, whose work is based on knowledge is not always the professional from the viewpoint mentioned above. Moreover, a number of criteria are ambiguous. For example, most scientists agree that programmers and engineers are knowledge workers (e.g. see Lee & Maurer, 1997; Starbuck, 1997), but the latter are not always capable to earn their lives without organization. On the one hand, a lot of programmers, all over the world work at home on their own, serving simultaneously customers from different parts of the globe. But, on the other hand, a huge set of programming tasks requires both considerable investments into hardware that an individual cannot afford on his own, and the team efforts of a number of specialists as a single person cannot cope with these tasks.

Probably the vagueness of the "knowledge worker" term results from some confusion between classification criteria and their consequences. For instance, the capability to produce the "finished" product without a company probably is only the consequence of the great share of mental activities in the work of such employees. Actually, it is namely the mental labour (in contrast to the manual one) that makes knowledge workers less dependent on expensive means of production, and therefore, less dependent on the organization.

To make our discussion more focused, further in this paper we attribute to knowledge workers the specialists fitting into the first four criteria listed above (high share of mental work, capability to create new knowledge, higher education, work with information). We exclude "pro-

fession" as narrowing the discussion too much, and we consider the "independence from an organization" in its comparative rather in its absolute sense[2], treating it as a consequence of the characteristics listed above.

The discussion on "knowledge-intensive firms" management (Alvesson, 1995; Starbuck, 1997; Nurmi, 1998; Robertson & Hammersley, 2000) represents in a certain sense the continuation of the debate on managing efficiently knowledge workers. In fact, it marks the transition from the micro-level (of a single individual) to the meso-level (of the whole organization) in the analysis of knowledge management issues. In this paper we use the "knowledge-intensive firm" (KIF) term to identify a company to which knowledge workers are specially important — either constituting the biggest part of the personnel in the company or providing significant contribution to the company's profits and long-term development. This definition is for sure quite vague and requires further specification — for example, it raises the questions of what share knowledge workers should occupy within the total workforce to classify a company as a KIF[3] and how to define the significance of their contribution, but this discussion goes beyond the scope of this paper (for more details, see, e.g. Alvesson, 1995). Furthermore, some traditionally industrial companies can have certain departments employing knowledge workers mostly (e.g., R&D department). Human resources management issues discussed in our paper are topical for such departments as well, though the whole company, probably, cannot qualify as a KIF. Further in the text we refer to such departments as KIF as well in order to keep our arguments concise.

Managing knowledge workers: key challenges

So, we have identified that the key assets of the knowledge workers are their knowledge, skills to apply it to the specific situation and the capability to create the new knowledge. These specific features determine some peculiarities in management of this group of employees.

We suggest that the keystone of this discussion lies in the change of the power balance in the "company owner — hired employee" relationship. In a common industrial organization an owner possesses some valuable assets and just hires an employee to exploit them. But when it concerns knowledge-intensive businesses and knowledge workers, the situa-

[2] We mean that knowledge workers are not always absolutely independent from the organization (absolute independence), however, they are more independent in comparison with a number of traditional group of workers (comparative independence).

[3] For instance, Starbuck (1997) defines KIF as a company, in which not less than one third of the workforce consists of the specialists with the higher education and experience of the doctoral degree level.

tion is the opposite: an employee, in fact, is the owner of the valuable asset and he leases it to the owner of the company — but with himself as with an inseparable tool to exploit this asset. Although the task of knowledge transformation — from individual into organizational one — is widely discussed in knowledge management literature (e.g., see Tsoukas & Vladimirou, 2001; Nonaka, 1991), nevertheless, many authors agree that the possibility to separate the knowledge from the knowing individual is very limited (Grant, 1996; Flood et al., 2001). That is why the efficiency of the application of knowledge (which is the key asset of firms that we discuss) is very dependent on the good will of an individual — both to transmit this knowledge as well as to apply it in the optimal way. As a result, a knowledge worker gets more bargaining power in relations with his employer than traditional workers do. Together with the immanent ownership of the valuable asset and means of production, this makes such workers less dependent on organization. A number of authors challenge this point of view (Drucker, 2002; Scarbrough, 1999), emphasizing that knowledge workers need some infrastructure and cooperation with a huge number of other staff in order to produce the finished product — that is exactly what an organization can provide for them (here we may return to the example of programmers, cited above). However, in our opinion, these statements should be considered not in the absolute, but in the comparative context (i.e. in comparison with the other groups of workers) — in fact, knowledge workers are not always independent from the organization, however, they depend on it less than the employers would like it to be. High mobility of knowledge workers on the labour market is a striking manifestation of this factor.

A question how to attract knowledge workers to an organization and retain them ensuring their motivation and commitment becomes crucial is such situation (Lee, Maurer, 1997; Flood et al., 2001; May, Korczynski, Frenkel, 2002; Horwitz et al., 2003; Thompson, Heron, 2005). Attraction, motivation and retention, these traditional tasks of human resources management, gain new meaning and importance, both strategic and economic — in their essence they turn being about acquiring new assets, using them in the most efficient way and retaining them in the assets' portfolio. However, the literature analysis and the experience prove that solving these problems appears to be a very difficult task.

The current situation on the labour market (featuring the lack of highly qualified specialists) complicates the task of *attracting* knowledge workers as these are companies who compete for the candidates rather than the opposite (Flood et al., 2001). It raises an important question: what can we offer to these specialists to make them choose our company? Miller provides a vivid example of the typical dialogue between a candidate and a

human resources manager on the screening interview leading to the negative outcome for the employer (Miller, 2002, p.16-17).

Motivating knowledge workers is also a non-trivial task (Brenner, 1999; Miller, 2002; Brelade & Harman, 2003; Dunkin, 2003; Horwitz et al., 2003). In our opinion, there are two reasons for this problem – peculiarities of knowledge workers' intrinsic motivation and difficulties in measuring knowledge work outcomes. Let us discuss these factors in detail.

(a) peculiarities of intrinsic motivation. Knowledge workers are considered to be different from other groups of employees by their structure of intrinsic motives where self-actualization and self-expression bear very high value (Brenner, 1999). For instance, Dunkin (2003) notes that many systems of remuneration prove inefficient for managing knowledge workers because they are based on the assumption that the higher pay stimulates individuals to work better, and this is not always true for the employees in discussion. There are different explanations for that. A number of authors (Miller, 2002; Johnson & Hill, 1963) claim that knowledge workers in the most of the developed countries have their lower levels of needs (in Maslow's terms) already satisfied, and that is why the needs for recognition and esteem for self-actualization become more important for them. We suggest that this is a disputable statement. Let us consider a typical example of a young programmer, who has recently graduated from the university and starts his work for a company. In most cases, he has not got yet his own flat and some other goods; he needs money to support his newly-born family (probably with a baby). According to Maslow his lowest needs are not satisfied. Nevertheless, our experience as a human resources manager in the software companies proves that money are often far from being a crucial factor for such specialists in their decision to accept a job. If they provided with some "suitable for living" remuneration level, another motives take the leading role, such as opportunity to take part in interesting projects or to communicate constantly with highly qualified colleagues, etc. Dunkin also claims that competitive level of remuneration is only a "hygienic" factor for knowledge workers (Dunkin, 2003, p.44). Moreover, young people, especially those who do not have family responsibilities yet, tend to perceive the acquisition of experience and qualification as being more important than money, pushing the latter into the background. Thus, in our opinion, the better explanation for these facts would be provided if Maslow's pyramid (if to continue discussion in his terms) is turned for knowledge workers either upside down (viewing the needs as satisfied only consequently) or sideward (viewing the needs as satisfied simultaneously). In any case, we have to accept that the motives of self-development and self-expression play a very important role for knowledge workers.

Undoubtedly, we simplify real life treating knowledge workers as rather homogeneous group with identical needs. We suggest that it is necessary to segment this group in order to develop recommendations of more practical value (e.g., as Lee & Maurer, 1997 and Prusak, 2002 do). For example, it is possible to distinguish knowledge workers' types, using different combinations of criteria that we have discussed in the previous paragraph, or to study these employees on the different stages of their life cycle. However, from our point of view, needs for self-development will be significant at any stage of a knowledge worker life cycle. Besides emotional commitment to self-actualization embedded in values and beliefs, there is a purely economic rationale behind this as well. Acquiring new knowledge and consistently updating existing one equals for a knowledge worker to acquisition of new assets that increase his/her market value but any standstill in this process may deteriorate it.

(b) difficulties in measuring the outcomes of knowledge work. Due to the specifics of knowledge work nature, control and measurement of knowledge workers' productivity is a difficult task (Drucker, 1999; Thomas, Baron, 1994; Mollenhoff, 1977). Practically for any job we can distinguish between two levels of an employee's efforts (resulting in his work efficiency) — (1) minimum, that is set up and controlled by the managers, and an employee might be punished for the results below this level as for unacceptable behaviour; and (2) maximum, that an employee potentially may reach at the given level of qualification. The gap between these two will be always there, although every organization is interested to decrease it as much as possible. Many achievements of management in XX century (e.g., Taylorism) were aimed on that and actually allowed to lessen this gap significantly for manual and routine-job workers. However, in the case with knowledge workers, an employer's opportunities to regulate this gap are strongly limited by causal ambiguity arising from the inseparability of knowledge from an individual and from the creative elements in his work. For instance, a manager (and only if he/she has enough qualification in the particular field he/she is trying to control) may estimate approximately the number of hours a knowledge worker needs to complete his/her task — e.g. a programmer — to write a certain code, a management consultant - to run corporate diagnostics or a designer — to create a new image for an advertisement. However, how would anybody ever know the exact time the particular knowledge worker spent to complete this work? That is why managers often involve knowledge workers in the goal setting, as often only the latter are able to evaluate the approximate man-hours needed to accomplish this or that work. Therefore traditional management tools such as control and pay-for-performance often fail to produce expected results, as knowledge workers may regulate for themselves both the lowest (for

control) and the highest (performance to be paid for) limits of these instruments. We can even suppose that under the certain circumstances knowledge workers would be interested to establish these limits below their real capabilities (and even much below). So in many cases managers have to rely mainly on good-will and intrinsic motivation of a knowledge worker to implement given task with maximum quality and minimum costs. This brings to discussion a problem of knowledge worker motivation.

Retention of knowledge workers equals, in fact, as we have already mentioned, to the task to preserve valuable organizational assets. As the results of the empirical research show, the personnel commitment to the particular organization, interesting tasks, and fulfilment of the implicit contract by the organization, play the key role for this issue (Flood et al., 2001; Lee & Maurer, 1997).

Thus we have discussed the main peculiarities of the knowledge workforce and the main challenges an organization needs to face in order to use this asset efficiently. Let us now investigate the human resources management practices that can help to succeed with these tasks.

Human resources management practices that help to meet these challenges

It is logical to assume that the above considered factors must impose certain new demands on the human resources management system in a knowledge-intensive company, transforming somehow traditional practices or establishing new priorities for them. This idea is far from being new in the management literature; Druker argued in the one of his early works that available concepts of personnel management were inadequate for managing knowledge workers (cited in Joseph, 2005, p.248). The search for efficient instruments to manage this group of employees still goes on (e.g., Lee, Maurer, 1997; Flood et al., 2001; May, Korczynski, Frenkel, 2002; Horwitz et al., 2003; Thompson, Heron, 2005), yet Currie and Kerrin (2003) acknowledge that the number of works published in this field is far from sufficient. We see the two key questions addressed by the researchers in these works: (1) what human resources management practices can contribute significantly to the above mentioned issues of managing knowledge workers? and (2) what particular tools/activities these practices should include? Enquiry in these issues in fact implies the answer to the question how HRM practices for knowledge-intensive companies should be changed in comparison with the traditional ones.

Before suggesting our vision on these questions, we would like to make an important remark: we think that the integrated application of the

different human resources management practices as a coherent system is more efficient than the implementation of only one of them (even a very advanced one) and ignorance to all of the others (for the support of this view, refer, for example, to Ichniowsky et al., 1997; Laursen, Foss, 2003). That's why when we focus our discussion on a particular practice we do not mean to reject the other ones. However in our opinion it is important not only to admit that the systemic approach to the human resources management is necessary but also to understand the substance and the focus of the every element of the system. That's why we focus on a certain HRM practice in this paper.

The works on managing knowledge workers claim different HRM instruments to be especially important —from workplace design (Brenner, 1999; Davenport et al., 2002) to information technologies (Davenport et al., 2002) and development of intraorganizational communications (Miller, 2002). Common discussion focuses around autonomy, trust and meritocracy as the key organizational issues that help to manage knowledge workers efficiently (Flood et al., 2001; Davenport et al., 2002; Dunkin, 2003). Undoubtedly, these factors are very important for attraction, motivation and retention of knowledge workers, but from our point of view they may influence the basic needs of this group only indirectly.

By these basic needs we mean knowledge workers' needs for self-development that we have discussed above. We suggest that a company's activities in the field of personnel training and development influence these needs directly. That is why we believe that these HRM practices can provide the most significant contribution to the solution of the tasks in discussion. Taking into consideration the specific characteristics of the knowledge workers, it is strange that the problems of their training and development did not attract much attention in the academic papers. A lot of authors mention that these practices are important (Flood et al., 2001; Miller, 2002; Brelade & Harman, 2003; Storey, 2005), but with the rare exceptions (Lee & Maurer, 1997), they do not discuss in detail what the company should do within its training and development programs in order to manage the knowledge workers successfully and what methods of training and development are the most efficient

For example, Flood et al. (2001) mention that an employee's expectations of personal development and skill development are the components of the implicit psychological contract between a knowledge worker and an organization, and that the fulfilment of this contract influences positively employee retention. Still, these authors do not explain how the company can meet these expectations. Storey (2005) also claims that knowledge workers "are likely to give high value to personal growth and to personal development opportunities at work because they realize that this is how

they will grow their human capital" (p.215). But in this work Storey does not dwell on the specific features of the development programs for such employees. Moreover, further he states that "knowledge workers may respond better to recruitment strategies which emphasize the opportunity to do new things … and to continue to learn and develop" (Storey, 2005, p.211). We agree with this statement but would like to emphasize that for motivation and retention of the knowledge workers these ideas must be not only stated in the recruitment strategy, but be actually implemented in the training and development programs. All these arguments emphasize once more the importance of the company policies in the area of development for the knowledge workers.

We have presented our point of view on the first question — we claim that human resources training and development practices can influence significantly the efficiency of the knowledge workers' management, and correspondingly, the success of the knowledge-intensive firms. Now let's turn to the second question: what methods of training and development will be particularly important for this group of employees? Lee and Maurer (1997) mention some ideas on this issue. They examine the problem of knowledge workers' retention and describe the role and the essence of different HRM tasks in prevention of various quitting scenarios. They discuss training and development among the other traditional HRM functions. Still, their key recommendations (that differ depending on the quitting scenario and the type of knowledge worker) focus on the different types of traditional training — e.g., getting a degree in one's profession, training for the skills required for a certain project, in-house training courses and seminars, etc. In a number of cases they mention such forms like individual learning package and refocusing training and development of employees toward other directions (not directly linked to current everyday work). The latter reasoning comes close to our idea that we will present further on, though it does not mention it explicitly.

Yet in our opinion traditional forms of training are useful in certain situations, but they are not the most efficient for knowledge workers development. The reasons of such inefficiency are related both to the training needs of knowledge workers and to the problems in organizing such training. Since these employees are often the experts in their field and they value the opportunities for autonomy and creativity, it can be very difficult to select an educational program for them that would fit their needs. The very essence of the knowledge work determines the originality and complexity of the knowledge and skills that knowledge workers might need to acquire. The specific character of creative knowledge work produces an uncertainty zone that makes the training planning task (what knowledge and skills might be needed tomorrow?) very complicated for the HRM de-

partment, while the task to find the training provider quickly (who can provide with this needed knowledge?) becomes almost impossible to complete. Besides, in order to run knowledge-creation process efficiently, the employees must possess not fully identical but complementary sets of knowledge and skills. This calls for the individual approach to training. Organizing such training through traditional formats (such as lectures and seminars) becomes a too expensive pleasure for the company if it can be implemented at all.

That is why we suggest that creating conditions for self-development can be the more efficient tool for knowledge workers development rather than traditional training. Such approach allows an employee to determine the directions and instruments of his/her development as well as the sources of new knowledge. Within this concept an employee becomes fully responsible for the development process while HRM's duty concerns creation of the favourable conditions and additional incentives for such self-development. From our point of view, this approach not just solves the problems of organizing appropriate training, but also contributes significantly to the challenges of managing knowledge workers that we discussed above. The organization that uses such training and development policy looks more attractive at the labour-market for knowledge workers, taking into consideration the structure of their motives. The typical quitting scenario that occurs when, as the time goes by, the worker feels a discrepancy between his/her personal development goals and organizational priorities (Lee & Maurer, 1997) is less likely to happen if an organization applies this approach. Thus it leads to the higher retention of the knowledge workers. Moreover these instruments, intensively aimed to satisfy the self-development needs, increase the knowledge workers' commitment and stimulate them to make every effort for the success of this particular company.

We argue that the following tools for creating favourable conditions and stimulating the development are among the most efficient:

(a) the corporate library and knowledge base as well as the access to the external knowledge bases (including via Internet). The more possibilities to receive information needed for further reflections, without extra losses of time and money, are available, the quicker and more motivated is the development process. For example, our experience proves that availability of a united knowledge repository, accumulating the company's experiences gained through the years is important for knowledge workers and contributes to the process of their self-development.

(b) job enrichment and rotation are, in our viewpoint, an indispensable condition of the knowledge workers' development, because exposure to

the new applied problems forms the grounds for development, widening the scopes of the employees' vision of the various tasks.

(c) coaching provides an opportunity to direct employees in their personal development, set up the goals of this development together and control to which extent these goals are met. Still the coacher does not take direct part in the development process, as he does not train for knowledge and skills, but gives the employee an opportunity to create them by himself.

(d) feedback on the results of the completed work. Such feedback in contrast to coaching evaluates and discusses the substantial results of development, the newly created knowledge in particular. The assessment provided by the professional colleagues and managers gives an opportunity to keep the unbiased view on the subject and get a constant influx of new ideas.

We have discussed in detail a particular HRM practice — the practice of creating conditions for knowledge workers' self-development. We argue that this practice can have a dramatic effect on the results of knowledge-intensive firms. Still, as we support the systemic approach to HRM, we suppose that different practices must be interrelated and intensify each other. So the next logical step is to discuss how the other HRM practices must be focused in order to support such approach to knowledge workers' development and to achieve the results expected. The selection practice can ensure that only the candidates who are ready to be responsible for their own development enter the company. One of the ways to achieve this is to include special criteria into candidate assessment procedure, such as successful examples of preceding educational experience, especially at the university, results of previous self-development endeavours, and the goals of personal and professional development for the next 3–5 years. Thus, the prerequisites for further efficient self-development must be created at the very entry into the company. Further on, the "develop or leave" principle must become one of the dominant values of the organization. Regular employee assessment and analysis of the dynamics of an employee's tasks (changes in their complexity and novelty) can serve as the basic tools to monitor the situation. Then, the professionalism of an employee and the dynamics of his/her development must serve as the key criteria for the promotion system. This approach to career ladder provides the extra incentives for self-development. In fact, it creates the dual effect: on the one hand, only the employees who have achieved the best results in professional development are promoted, on the other hand, each career step leads to the exposure to new, more complex work tasks, thus stimulating further development.

Our arguments can bring up a logical criticism of whether such a high "individualization" of one of the HRM practices can stimulate centrifugal forces in the organization, and, consequently, transform the firm into the pool of isolated and poorly coordinated intellectual "units". We suggest that in order to prevent such an effect the practice of creating conditions for self-development should be supplemented with a particular type of corporate training practice — held in the traditional format but aimed at the very specific issues. We propose to focus this training program on shaping organizational identity and building and sustaining employee cooperation procedures, enabling the latter to coordinate their efforts efficiently as a team, rather than on acquiring particular professional knowledge and skills. To summarize, we argue that creating possibilities for self-development coupled with the other HRM practices will help to meet the challenges of knowledge workers' management that were discussed at the beginning of our paper.

HUMAN RESOURCES DEVELOPMENT PRACTICES AND OTHER KNOWLEDGE-RELATED PROCESSES

We suggest that the proposed personnel development practices, besides their contribution to efficient management of knowledge workers, also influence positively two important knowledge management issues — organizational knowledge sharing and absorptive capacity. We will explain our point of view in the following paragraphs.

Knowledge-sharing and human resources development practices. Knowledge sharing discussion occupies one of the dominant positions in the knowledge management literature. It is one of the basic processes enabling both creation of new knowledge (for example, new products development) as well as improvement of current practices (for example, client service improvement). This process is undoubtedly important for knowledge-intensive companies, too. However a number of authors claim that many companies suffer from considerable barriers, impeding knowledge sharing and finally reducing organizational efficiency (e.g., Husted & Michailova, 2002). From this standpoint, the question of what HRM practices can help to reduce this problem in the knowledge-intensive context appears to be within the scope of our paper.

To meet this issue, let us analyze typical knowledge sharing barriers. We identified three key groups of barriers in the literature:

a) *Individual* barriers, grounded in the participants of the knowledge sharing process, in both the receiving and the transmitting parties. This group includes a wide range of barriers — e.g. the fears to lose personal competitive advantage and to be misunderstood and misinterpreted, group

thinking, preference to one's own ideas instead of somebody's else, etc. (for a detailed list, see, for example, Husted & Michailova, 2002)

b) *Infrastructural* (organizational) barriers, determined by organizational structure, system of communications and organizational culture (Bock et al, 2005; Hall, 2002). For example, Book et al. note that to share knowledge successfully an organization must reinforce the value of trust — both among employees as well as between an employee and an organization, and promote free information flows and tolerance to mistakes.

c) *Ontological* barriers, dealing with the knowledge itself and arising from the tacit knowledge transfer problems (Nonaka, 1991), as well as from perceived value of knowledge (Ford & Staples, 2005) that is often not recognized at all by the knowledge sharing participants (Hall, 2002).

How pressing are these barriers if we speak about knowledge sharing among knowledge workers? We suppose that the infrastructural and ontological barriers will exist in this field as well. Concerning the individual barriers, we see the answer as not that evident. Husted and Michailova (2002) claim that managerial activities aimed to establish efficient knowledge sharing almost always face employees' "natural" hostility. A substantial gap between organizational and individual interests is a reason for this hostility: if a person's knowledge determines his/her "value" at the labour-market, knowledge sharing means for him/her deterioration of this "value". However, we suggest that knowledge workers have a good reason to treat knowledge sharing in the other way. Knowledge workers are interested in their own professional development — both from economic (as it is knowledge that determines their value at the labour-market) and emotional point of view (as self-development and acquisition of new knowledge brings them psychological satisfaction). Sharing experience and knowledge with colleagues plays a crucial role in such professional development — correspondingly, knowledge workers must be interested in the intense knowledge sharing. Thus, an interesting contradiction arises: knowledge workers can be both very interested in knowledge sharing and reluctant to it. The certain instruments of HRM in the knowledge-intensive firms must help knowledge workers to get over this contradiction. We argue that creating conditions for self-development can fulfil this task successfully.

Absorptive capacity and human resources development practices. The term "absorptive capacity", introduced by Cohen and Levinthal (1990) defines the "ability of the firm to recognize value of new external information, assimilate it and apply it to commercial ends" (Cohen & Levinthal, 1990, p.128). One of the key ideas about absorptive capacity is that it depends on the prior knowledge that the company has. Still the authors emphasize that if this prior knowledge is too focused and narrow, it leads to rejection of the new knowledge as irrelevant for the company. De-

veloping this idea further, Cohen and Levinthal claim that it is knowledge diversity that enables to consider the new knowledge as relevant and relate it to the existing body of organizational expertise. Therefore, such diversity is one of the crucial characteristics of the prior organizational knowledge contributing to the absorptive capacity of the company.

Recent research demonstrates that certain HRM practices influence positively the absorptive capacity of the firm (Minbaeva et al., 2003). These authors argue that the absorptive capacity of the company is determined by two components: employees' capabilities and motivation. Minbaeva and co-authors suggest that employees' capabilities include their educational background and acquired job-related skills that, in fact, constitute this accumulated prior knowledge that the company needs to adopt and use new information. Proceeding with this logic the authors incorporate personnel training into their model, along with the other HRM practices that they see as influencing the absorptive capacity positively. However, they limit this practice to the traditional formal training, measured it in their research by the number of training days per worker per year. Finally Minbaeva and co-authors conclude that an organization needs to possess both discussed factors — capabilities and motivation of workers — simultaneously in order to activate its absorptive capacity.

Taking into consideration these results we suggest that proposed practices of knowledge workers development have a positive effect on the absorptive capacity development — both in direct and indirect ways. The direct influence is manifested through the development of prior knowledge. In fact, human resources training and development actually build up prior knowledge — correspondingly, the efforts of the company in this field will influence directly its absorptive capacity. Similar idea is expressed by Cohen and Levinthal who remark that "firms also invest in absorptive capacity directly, as when they send personnel for advanced technical training" (Cohen & Levinthal, 1990, p.129). Further on, we claim that the practices we have suggested provide doubled contribution as they develop not just prior knowledge per se but also increase its' diversity — as every employee chooses the direction for his/her development on his/her own.

The indirect influence is manifested through knowledge workers motivation that, as we have hypothesized above, increases if the discussed personnel development practices are applied. Moreover, Cohen and Levinthal emphasize that it is very difficult to "buy" prior knowledge at the market (hiring new employees is one of the methods to do it), because the knowledge acquired this way is extremely difficult to integrate into the body of expertise the company already has. So, the human resources development practices that we have suggested exercise indirect influence on the absorptive capacity development through the knowledge workers reten-

tion in the company, in other words, through reduction of the workforce turnover and, correspondingly, reduction of the company's need to buy this knowledge from "outside".

Conclusion: Directions for future empirical research

In this paper we have demonstrated what distinguishing features knowledge workers have and how these features challenge three key tasks of managing this type of workforce: knowledge workers' attraction, motivation and retention. Further we have suggested that the certain training and development practices (namely, creating conditions for self-development) provide significant contribution to meeting these challenges. Based on the analysis, presented in this paper, we formulate a number of hypotheses that need to be examined empirically.

Hypothesis 1: The company's practices aimed to create conditions for knowledge workers' self-development are important criteria for a knowledge worker when he/she chooses a company to work for.

Hypothesis 2: The company's practices aimed to create conditions for knowledge workers' self-development have a positive effect on knowledge workers' motivation by increasing their willingness to contribute.

Hypothesis 3: The company's practices aimed to create conditions for knowledge workers' self-development have a positive effect on knowledge workers' retention by increasing their organizational commitment and intention to stay.

Our further discussion of the relationship between suggested human resources management practices for knowledge workers and other knowledge-related processes, lead to another two hypotheses:

Hypothesis 4: The company's practices aimed to create conditions for knowledge workers' self-development reduce individual barriers to knowledge sharing among knowledge workers.

Hypothesis 5: The company's practices aimed to create conditions for knowledge workers' self-development have a positive effect on the absorptive capacity of the company.

Discussing directions for the future empirical research, we would like to emphasize two more issues. First, as we have demonstrated at the first section of our paper, the question whom to consider as knowledge workers is a non-trivial one, not having a single solution. For the ease and brevity of the argumentation we have focused our attention on the quite narrow group of employees that fit most of the cited criteria. However we suppose that in the reality various types of knowledge workers can be identified (for example, using the cited criteria in different combinations), and, what is most important, it is not impossible that these types will differ by

their motives' structure and key factors of their behaviour in an organization. Following this hypothesis, the future empirical study needs to incorporate and monitor multiple criteria for classifying the respondents as knowledge workers. Moreover, it might be a good idea to involve a "control" group of employees who do not fit "knowledge worker" criteria. The data gathered this way may clarify the discussion on peculiarities of knowledge workers. .

Secondly, we suggest that the discussed ideas will benefit from considering them within dynamic context of the organizational life-cycle. We presume that for any firm (including knowledge-intensive one) the different types of knowledge (tacit/explicit, internal/external) dominate on the different stages of the organizational life-cycle. This naturally leads to different knowledge-related processes being in the focus of the organizational concern at each stage. From this viewpoint, it is interesting to examine whether formulated above hypotheses are equally significant for the companies at the different stages of their life cycle.

We suggest that these considerations allow for more focused empirical research program and, as a result, for further recommendations of higher practical value.

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